

# Notice of Allowability

Application No.

10/709,042

Examiner

Irakli Kiknadze

Applicant(s)

TIEARNEY ET AL.

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment filed 10/02/2006.
2. ☒ The allowed claim(s) is/are 1,4-16 and 25-27.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 4/8/2004
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 20061218.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

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### **DETAILED ACTION**

1. In response to the Office action dated June 27, 2006 the Amendment has been received on October 2, 2006.

Claims 1, 14, 25 and 27 have been amended.

Claims 2, 3 and 28 have been canceled.

Claims 1, 4-16 and 25-27 are currently pending in this application.

### **EXAMINER'S AMENDMENT**

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

3. Authorization for this examiner's amendment was given in a telephone interview with Thomas E. Donohue (Reg. No. 44,660) on December 20, 2006.

4. The application has been amended as follows:  
In claim 25, on line 5, change the phrase "target material," to --target material.--.

### ***Allowable Subject Matter***

5. Claims 1, 4-16 and 25-27 are allowed.

6. The following is an examiner's statement of reasons for allowance:

Claim 1 is allowed because prior art fails to teach or make obvious an x-ray anode comprising one or more graded CTE material layers coupling a substrate material comprising a carbon-fiber material to a target material as claimed in claim. Claims 4-13 and 16 are allowed by virtue of their dependence.

Claim 14 is allowed because prior art fails to teach or make obvious an x-ray anode comprising one or more graded CTE material layers coupling a substrate material to a target material, wherein varying a coefficient of thermal expansion of the one or more graded CTE material layers is achieved by altering the proportions of the carbon fiber material as claimed including all of the remaining limitations of the claim. Claim 15 is allowed by virtue of its dependence.

Claim 25 is allowed because prior art fails to teach or make obvious an x-ray anode comprising one or more graded CTE material stratum coupling a substrate material comprising a carbon-fiber material to a target material as claimed in claim. Claim 26 is allowed by virtue of its dependence.

Claim 27 is allowed because prior art fails to teach or make obvious an x-ray anode comprising one or more graded CTE material having different CTE determined by the percentage of carbon in a slurry mixture as claimed including all of the remaining limitations of the claim.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Response to Arguments***

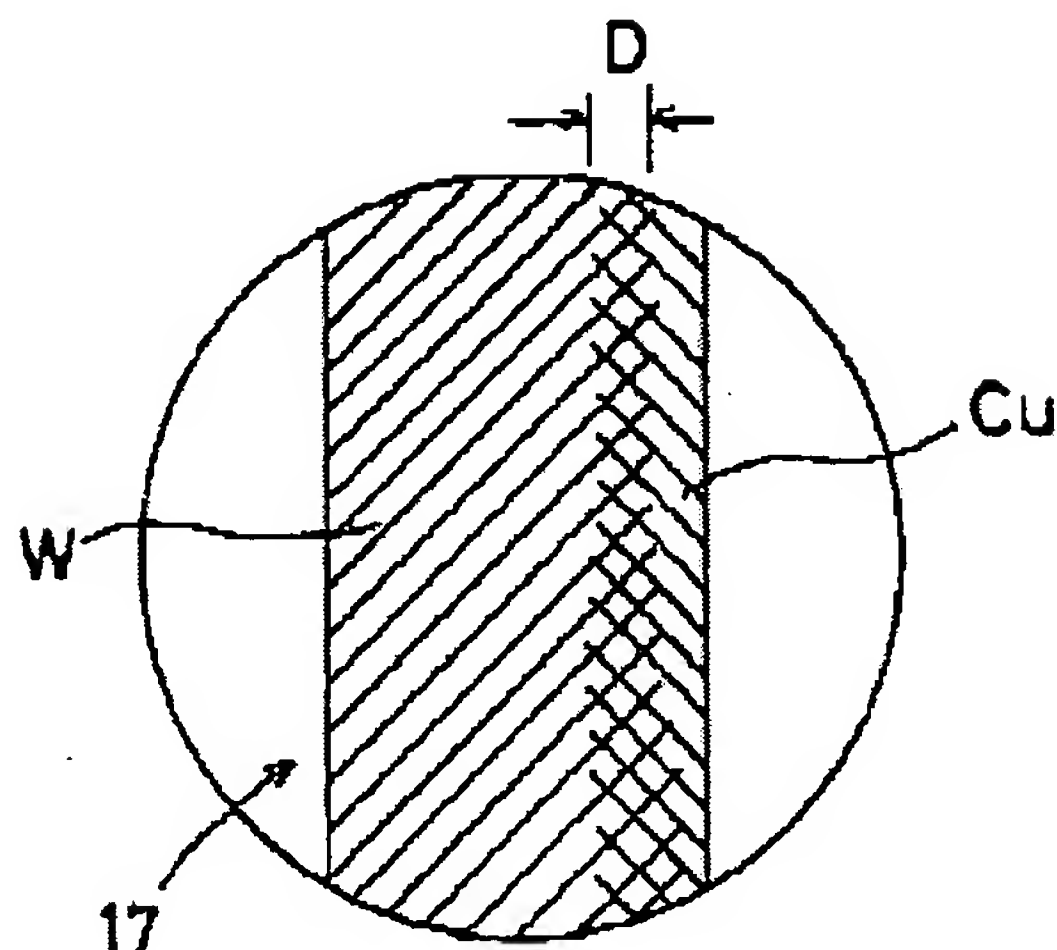
7. Applicant's arguments, see page 5, filed October 2, 2006, with respect to claims 1, 4-16 and 25-27 have been fully considered and are persuasive. The rejections of claims 1, 4-16 and 25-27 have been withdrawn.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Upadhyaya et al. (US Patent 4,972,449), Kaplan et al. (US Patent 3,887,723), Penato (US Patents 4,571,286; 5,125,020 and 5,138,645), Virshup et al. (US Patent 5,825,848) and Truskovska (US Patent 5,875,228) teach the x-ray anodes comprising one or more layers coupling with the substrate materials.

Shiratori (JP 05266838 A) teaches an x-ray anode (Fig.3) comprising:



a substrate material (Cu);

a target material (W); and one or more graded CTE material layers (D) coupling the substrate material (Cu) to the target material (W) (see abstract and constitution) but fails to teach that the substrate comprises a carbon-fiber material.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irakli Kiknadze whose telephone number is 571-272-2493. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571-272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Irakli Kiknadze  
December 20, 2006

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EDWARD J. GLICK  
SUPERVISORY PATENT EXAMINER